OUR BOOK SHELF.

Probleme Kritische Studien über den Monismus. Von Dr. H. v. Schoeler. Pp. viii + 107. (Leipzig: Engelmann, 1900.)

DR. VON SCHOELER'S critique of monism is the work of a mind which, with all reverence for scientific fact, has nothing but disdain for post-scientific theory. The monism of which Haeckel, for instance, or Romanes is the exponent, has captured many scientific intellects, but it is in Dr. von Schoeler's view an arbitrary conceptual construction. It leaves the problems still with us. Of the ultimates of physics, of biology, of psychology, we know but little, and that little makes against such monism. Life is more than knowledge, and will find emancipation neither in science nor in religion, but in art.

Dr. von Schoeler's discursive criticisms of a variety of attempts at construction, or steps towards construction, are of somewhat unequal value, but not uninteresting. They enter into some detail, and might well give pause to any one who is inclined to build a system without straw to his bricks. But, if it be true that a man's *nay* has no meaning apart from the underlying and implied *yea*, the unsatisfactory character of our author's positive teaching must reflect upon his polemics. The way in which he couples Plato and W. K. Clifford on p. 95 suggests doubts as to his insight. Those who allow that current mechanical theories are tending more and more to immaterialism, that organic evolution reduced to its facts cannot assert even descriptive continuity unhypothetically, and that for a deduction of consciousness from the non-conscious we have not so much as the point of departure, will be left cold by Dr. von Schoeler's appeal for Diploïsmus, and his enthusiasm for Goethe's *Weltanschauung* made complete in the light of Kant's. The duality for which he goes to Bruno's *gemini efficientes* falls even for Dr. von Schoeler within a monism (v. p. 97, ll. 1–4). And Kant's provisional dualism does not exclude a hypothetical monism, idealist or agnostic. Only the resolution of it from the standpoint of understanding is not achievable, and from any other standpoint it cannot be more than hypothetical.

It is doubtful, finally, whether Dr. von Schoeler quite understands in what sense a system admits certain unexplained points as truly problems, and in what sense it claims to solve them. Is the origin of motion a problem recognised by monism as one which it must attempt to solve? And is not metaphysic always, so to speak, a *post mortem* examination? The "gray in gray" of philosophy is a commonplace: "the owl of Athene wings for flight only when twilight falls." H. W. B.

Diamond Drilling for Gold and other Minerals. By G. A. Denny. Pp. x+158. (London: Crosby Lockwood and Son, 1900.)

AT the Paris Exhibition of 1867 much interest was aroused by Leschot's invention for cutting through hard rock by diamonds in rapid rotation. Originally intended for use on a small scale, this method was soon applied by Major Beaumont and others to deep boring; and the great improvements made of recent years in the construction of the instruments used, and the large amount of experience that has been gained by their general use in mining districts, have added so much to the importance of the subject of boring, that it is no longer possible to deal with it adequately in a chapter of a general treatise on mining. An independent work is needed. In German, this exists in Tecklenburg's monumental work. In English, however, Mr. Denny's handbook is the first to give a detailed account of the use of modern diamond core-drills in searching for mineral deposits. The work, which covers 158 pages, contains much information of a practical character, including particulars of the cost of apparatus and of working. It is, unfortunately, limited in its scope. South African conditions are alone considered, and the descriptions of the drills are confined to machines made by two American firms. The numerous well-designed drills of English and Continental make are not mentioned. The work cannot, however, fail to be of value to any one contemplating using diamond-drilling machines for the examination of mineral lands in South Africa.

The author gives some interesting results, deduced from his own experience, of the rate of progress of machine diamond drilling in various rocks. For holes up to 1000 feet he finds that, including all normal delays, the rate averages per week: in limestone, 150 to 200 feet; in Carboniferous sandstone, 150 feet; in slate, 100 to 150 feet; in greenstone, 110 feet; in basalt, conglomerate, diabase, diorite and dolomite, 100 feet; in porphyry, 90 feet; in quartz, 85 feet; in granite, 73 feet; and in chert, 60 feet. As regards the cost of drilling, the author points out that diamond drilling on the Witwatersrand is almost always done by contract, the reasons being that men with the requisite experience are not easily secured, and that a mining company rarely has sufficient work to justify the outlay upon the plant. The average tender for a hole 3000 feet deep would work out at about 37*s.* 6*d.* per foot, the price being fixed on a sliding scale, say 25*s.* per foot for the first 500 feet, and rising by 5*s.* per foot every 100 feet. If the company undertook the work on its own account, the cost per foot would be about 26*s.* 8*d.*, or 3950*l.* for the 3000 feet. This with 2340*l.*, the cost of drilling outfit, brings the total cost of the hole to 6290*l.*, as compared with 5625*l.*, the contractors' price. It is to be regretted that the author has not compared these prices with those obtaining elsewhere. The bore-hole at Paruschowitz in Upper Silesia, for example, the deepest in the world, completed to a depth of 6566 feet in 1893, was bored by the diamond drill. The average rate of progress was 16½ feet a day, and the cost was 3761*l.*, or 35*s.* a yard. Details of the average working cost of diamond drills in Victoria and New South Wales, which are published annually in the Government reports, might advantageously have been cited for purposes of comparison. B. H. B.

Symons's British Rainfall, 1899. Compiled by H. Sowerby Wallis. Pp. 251. (London: Edward Stanford, 1900.)

A PORTRAIT of the late Mr. G. J. Symons, the founder of the British Rainfall Organisation, and an appreciative tribute to his memory, are naturally found in this volume—the first to appear without his name upon the title-page. The thirty-nine volumes for which Mr. Symons was responsible form a real monument to his industry and scientific work. Mr. Sowerby Wallis, who was associated with him for thirty years, will continue the work along the lines which have hitherto proved so successful.

The usual particulars are given concerning the rainfall and meteorology of various parts of the British Isles during the year 1899, as observed at about 3500 stations. The average rainfall of the ten years 1890–1899 is discussed in an article, the values being given for a hundred stations well distributed over the three kingdoms. The discussion is only provisional, but so far as it has gone it indicates that over a large part of the kingdom the rainfall in the period considered was deficient by from 5 to 10 per cent. and upwards. Over an area of about 300 miles long by 100 miles wide, stretching right across the country from south-west to north-east, the fall for the period shows a deficiency of 10 per cent. or more. In other words, accepting the values discussed, it appears that little more than eight and a half years' rain fell over a large part of Central England in the ten years 1890 1899.